Vol. 1.—No. 12. Price As. 8.

# JOURNAL OF THE AMATEUR PHOTOGRAPHIC SOCIETY OF MADRAS.

November, 1895.

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**Ordinary Meetings.**—*The Ordinary Meetings of the Society are held on the first Friday each month at 6 p. m.*

**Visitors.**—*Members are at liberty to introduce visitors to the Ordinary Meetings of the Society.*

**Membership.**—*Applications for Membership should be addressed to the Honorary Secretary.*

**Election of Candidates.**—*Candidates for election shall be proposed by one member and se by another; and they shall be ballotted for at the following meeting.*

**Communications.**—*Communications connected with the issue of the Journal should be Messrs. Oakes & Co., Limited, "BEEHIVE" PRESS, Mount Road, Madras.*

**Letters to the Editors.**—*Should be addressed, c/o Hony. Secretary, Chetput, Madras.*

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## IMPORTERS OF PHOTOGRAPHIC MATERIALS.

### ILFORD PLATES.

ORDINARY.

| | | RS. | A. |
|---|---|---|---|
| $\frac{1}{4}$ plate | ... ... ... ... ... per dozen ... | 1 | 1 |
| $\frac{1}{2}$ do | ... ... ... ... ... „ ... | 2 | 8 |
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RAPID.

| | | | |
|---|---|---|---|
| $\frac{1}{4}$ plate | ... ... ... ... ... per dozen ... | 1 | 8 |
| $\frac{1}{2}$ do | ... ... ... ... ... „ ... | 2 | 14 |
| $\frac{1}{1}$ do | ... ... ... ... ... „ ... | 5 | 4 |

EXTRA RAPID.

| | | | |
|---|---|---|---|
| $\frac{1}{4}$ plate | ... ... ... ... ... per dozen ... | 1 | 10 |
| $\frac{1}{2}$ do | ... ... ... ... .. „ ... | 3 | 14 |
| $\frac{1}{1}$ do | ... ... ... ... ... „ ... | 6 | 9 |

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| | | | |
|---|---|---|---|
| **Ilford P. O. P.**, per tube of 2 full sheets | ... ... | 1 | 8 |
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| **Do** **do** „ packet of 28 $\frac{1}{4}$ plate | ... | 1 | 2 |
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| **Do** **do** „ „ 6 $\frac{1}{1}$ „ ... | ... | 1 | 2 |

**Ilford Printing Out Papers** rank deservedly high owing to the ease with which they can be manipulated, while the brilliancy, density and finish of the prints obtained are most satisfactory. Any ordinary toning solution can be used.

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| | | | |
|---|---|---|---|
| Per packet of 36 $\frac{1}{4}$ plate sheets | ... ... ... ... | 1 | 2 |
| Do 16 $\frac{1}{2}$ „ „ | ... ... ... ... | 1 | 2 |
| Do 6 1/1 „ „ | ... ... ... ... | 1 | 2 |

Admirably suited to the Indian climate, **Eastman's Solio Papers** are in constant demand. The effects obtained by the variety of density render them the most artistic papers, *par excellence.*

### MOUNTS.

| | | | |
|---|---|---|---|
| **C. D. V.** White or Tinted Grey | per doz .. | 0 | 4 |
| **Do** Cream, gold bevelled edge ... | „ ... | 0 | 6 |
| **Cabinet.** Plain Cream ... ... ... | „ ... | 0 | 8 |
| **Do** Tinted Grey ... ... ... | „ ... | 0 | 9 |
| **Do** Cream, carmine margin ... | „ ... | 0 | 10 |
| **Do** Cream, gold bevelled edge ... | „ ... | 0 | 13 |
| **View** $\frac{1}{4}$ Plate, Cream ... ... ... | „ ... | 0 | 4 |
| **Do** $\frac{1}{2}$ do do ... ... ... | „ ... | 0 | 10 |
| **Do** $\frac{1}{1}$ do do ... ... .. | „ .. | 1 | 4 |
| White with red Oxford lines 8" x 6" ... | ...each... | 0 | $1\frac{1}{2}$ |
| Do do $9\frac{1}{2}$" x $7\frac{1}{2}$" ... | ... „ ... | 0 | 2 |
| Do do $13\frac{1}{2}$" x $10\frac{1}{2}$" ... | ... „ ... | 0 | $3\frac{1}{2}$ |
| Plate mark, grey with India paper centre 10" x 8" by 7' x 5" . | „ ... | 0 | $3\frac{1}{2}$ |
| Do do $14\frac{1}{2}$" x $10\frac{1}{2}$" by $9\frac{1}{2}$" x $7\frac{1}{2}$" ... | ... | 0 | 5 |

### WRATTEN AND WAINWRIGHT'S PLATES.

ORDINARY.

| | | RS. | A. |
|---|---|---|---|
| $\frac{1}{4}$ plate | .. ... ... ... ... per dozen ... | 1 | 12 |
| $\frac{1}{2}$ do | ... ... ... ... ... „ ... | 3 | 10 |
| $\frac{1}{1}$ do | ... ... ... ... ... „ ... | 6 | 2 |

INSTANTANEOUS.

| | | | |
|---|---|---|---|
| $\frac{1}{4}$ plate | ... ... ... ... ... per dozen ... | 2 | 0 |
| $\frac{1}{2}$ do | ... ... ... ... ... „ ... | 4 | 0 |
| $\frac{1}{1}$ do | ... ... ... ... ... „ ... | 7 | 6 |

DROP SHUTTER.

| | | | |
|---|---|---|---|
| $\frac{1}{4}$ plate | ... ... ... ... ... per dozen ... | 2 | 3 |
| $\frac{1}{2}$ do | ... ... ... ... ... „ ... | 4 | 6 |
| $\frac{1}{1}$ do | ... ... ... ... ... „ ... | 7 | 14 |

### EASTMAN'S BROMIDE PAPERS.

| | | | |
|---|---|---|---|
| $\frac{1}{4}$ plate, permanent *A* & *B* ... | ... per dozen ... | 0 | 14 |
| $\frac{1}{2}$ Do do *A* & *B* | ... „ ... | 1 | 10 |
| $\frac{1}{1}$ Do do *B* ... | ... „ ... | 2 | 10 |
| 10 x 12 *B* | ... „ ... | 5 | 0 |
| 17 x 23 do *B* ... | ... per $\frac{1}{2}$ dozen.. | 7 | 4 |
| $\frac{1}{2}$ plate ex. Extra Rapid *A* & *B* | ... per doz ... | 1 | 6 |
| $\frac{1}{1}$ Do do *B* ... | ... „ ... | 2 | 0 |
| 12 x 10 do *B* ... | ... „ ... | 4 | 4 |
| 17 x 23 do *B* ... | ... „ ... | 6 | 2 |

### EASTMAN'S PLATINO BROMIDE PAPERS.

A new Argentic Bromide paper giving a platinum effect, easy to handle and as rapid as gelatino-bromide paper.

Soft quality, thin smooth paper.

| | | | |
|---|---|---|---|
| $\frac{1}{4}$ plate | ... ... ... ... per dozen sheets... | 1 | 0 |
| $\frac{1}{2}$ Do | ... ... ... ... „ „ ... | 1 | 14 |
| $\frac{1}{1}$ Do | ... ... ... ... „ „ ... | 3 | 4 |
| 10 x 12 | ... ... ... ... „ „ ... | 5 | 8 |

**Eastman's Bromide Papers** are so well known throughout the photographic world that comment on the effective and artistic results obtainable with them, under skilful manipulation, is unnecessary.

### MARION & CO.'S MARIONA PAPER.

| | | | |
|---|---|---|---|
| Per packet of 36 $\frac{1}{4}$ plate sheets | ... ... ... ... | 1 | 4 |
| Do 16 $\frac{1}{2}$ „ | ... ... ... ... | 1 | 4 |
| Do 6 $\frac{1}{1}$ „ | ... ... .. ... | 1 | 4 |

**Mariona Paper.**—The advantage of using this paper is that prints can be obtained with it either by development or the usual printing process. It will tone to a beautiful Sepia and through every shade to a rich dark Mauve.

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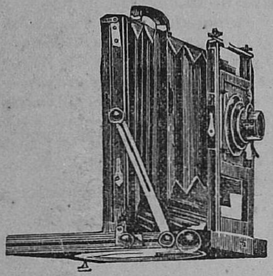

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For hard negatives and general work. { A. Thin, Smooth Paper. C. Thick, Rough Paper.

**HARD QUALITY.**

For soft or flat negatives. { A. Thin, Smooth Paper. C. Thick, Rough Paper.

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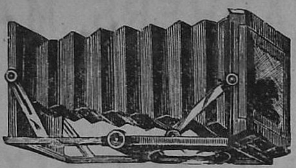
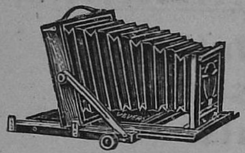


A light and strong Camera, made of the finest, well-seasoned Spanish Mahogany, size 5" x 4," well framed together, Square Bellows Body, 3 Double Backs; rack and pinion adjustment; fitted with a Ross' Rapid Symmetrical Lens, with Iris Diaphragm. Brown Canvas Waterproof Case, leather bound, lined green baize, with shoulder straps.

**Cash Rs. 240, Credit Rs. 270.**

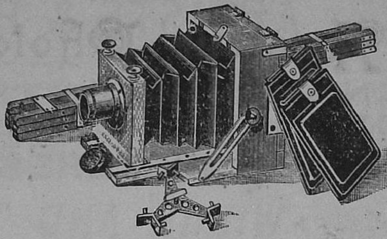
## "Tourist" Half-plate Camera.



A thoroughly well-made Camera, light, strong, and rigid when erected. Fitted with best conical varnished leather bellows, rack and pinion adjustment, swing and reversing back, rising and falling front, loose circular lens board, with 3 Double book form slides, with Double hinge shutters, side clasps and ivory numbers.

**Cash Rs. 87, Credit Rs. 99-8.**

## The Amateur's Outfit.



Consisting of bellows body Camera, Lens, Stand, and 4 single Metal Dark Slides. It is a thoroughly sound little article; reliable and well finished in Mahogany.

**Hall-Plate** ... ... **Cash Rs. 75, Credit Rs. 85.**
**Quarter-Plate** ... ... **" 45, " 50.**

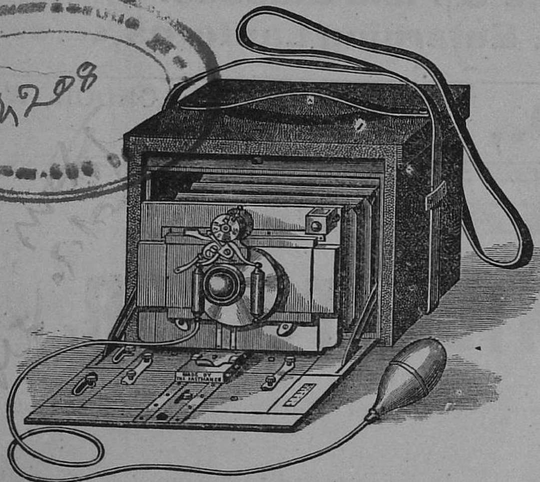
## The "Fallowfield" Camera.

A compact brass-bound, Spanish Mahogany, Half-plate Camera ($4\frac{1}{4}$" x $3\frac{1}{4}$"), of best workmanship and finish, by Fallowfield, with folding tail-board, square leather bellows; rising and falling front; vertical and horizontal swing back; rack-work focussing arrangement of sufficient range to allow of it being used for the longest or shortest lens. This Camera has been lightened in every way possible, consistent with strength and rigidity. When folded, measures $5\frac{1}{2}$" x $6\frac{3}{4}$" x 3". Fitted with 3 double dark slides and tripod.

**Cash Rs. 100, Credit Rs. 112-8.**

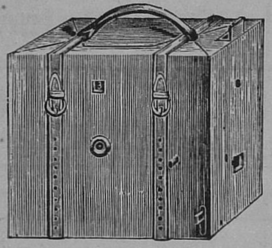
## Eastman's Kodaks.

194208



| | Cash. RS. A. | Credit. RS. A. |
|---|---|---|
| No. 5. Kodak "Folding." For rectangular pictures, 7" x 5"; capacity 54 exposures without reloading; size of Camera (folded), 10" x $7\frac{1}{2}$" x 9"; weight loaded, 9lb. 5 oz.; complete with shoulder strap, loaded with 32 exposures, fitted improved frictionless shutter, and manual of instructions .. | 305 0 | 345 0 |
| Spare Spools of Films for 32 exposures ... | 20 0 | 22 8 |
| No. 3. Kodak "Junior." For rectangular pictures, $3\frac{1}{4}$" x $4\frac{1}{4}$"; capacity 60 exposures without reloading; size of Camera, $4\frac{1}{4}$" x $5\frac{7}{8}$" x $9\frac{1}{4}$"; weight loaded 3lb. 7 oz. Loaded with 60 exposures, including sole leather carrying case and manual of instruction .. .. ... ... ... .. | 180 0 | 205 0 |
| Spare Spools of Films for 60 exposures ... | 13 8 | 15 8 |
| Clamping Reels, for No. 3 Kodak (Junior) and No. 5 Kodak (Folding) ... ... ... ... | 4 0 | 4 8 |

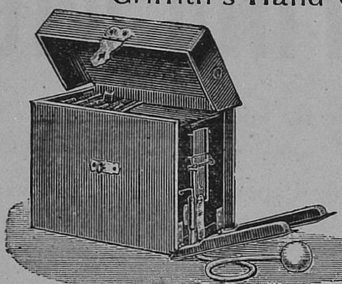
## Fallowfield "Facile" Hand Camera.



Carries 12 Plates or Films ($4\frac{1}{4}$" x $3\frac{1}{4}$"), with 5" x 4" Rapid Rectilinear Lens, Four Rotating Stops, working at F/8, 11, 22, and Sunk Finder, giving identical view.

**Cash Rs. 120,**
**Credit Rs. 135.**

## Griffith's Hand Camera.



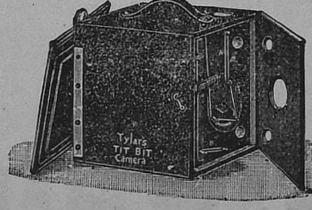
Quarter-plate Fixed Focus Hand Camera, with 3 Double Dark Slides, one View Finder and Pneumatic Release to Shutter.

**Cash Rs. 45,**

**Credit Rs. 50.**

## The "Tit Bit" Camera.

Leather-covered, Collapsible Handle, and Double Finders for vertical and horizontal use. The Lenses are specially selected and will cover a $\frac{1}{4}$-plate sharply to the extreme corners. No complications; it is strong and durable, with Six single metal Slides. Weight 24 oz., size $5\frac{3}{4}$" x $4\frac{1}{4}$" x $5\frac{1}{4}$".




**Cash Rs. 30, Credit Rs. 34.**

# Mount Road, Madras.

*The best Picture exhibited at the Society's Monthly Competition in October.*

PHOTO BY REV. E. MAENNIG.

PHOTO ENGRAVING BY M. E. PRESS.

"BANYAN ROAD, COIMBATORE."

# Journal of the Amateur Photographic Society of Madras.

Vol. I. NOVEMBER, 1895. No. 12.


## *OUR JOURNAL.*

THE current number completes the first yearly volume of our *Journal*, and it now remains for the members generally to say whether they wish it to be continued in the future and to offer any suggestions that occur to them for making it still more useful to themselves and the other subscribers.

The *Journal*, as stated in its first number, owes its existence to the great kindness of Messrs. Oakes and Co., Ld., who have practically borne the entire expense of publication. This cannot of course be expected to go on, and at our next Meeting, on the 6th December, the question must be discussed and decided as to whether the Society is now in a position to undertake the cost of issuing the *Journal* to all members free of cost beyond the annual subscription.

The greatest stumbling-block in the way of the Editors is the lack of original articles on photographic subjects. For want of these they have been compelled to reprint articles which were read before the Society sometime before the *Journal* was started; but surely, with the largely increased number of members now on the roll, there ought to be very many Amateurs capable of imparting information of the most useful kind. Up to now the number of members who have undertaken the troublesome task of preparing papers and demonstrations may be counted on the fingers of one hand, and the Editors are sure that the new Honorary Secretary would be only too delighted if some of the younger members would favour the Society with a paper (long or short, as the writer may please) on some photographic subject with which they may be more or less familiar.

The Editors will be glad to hear at the earliest possible date from the members, with suggestions for the improvement of the matter contained in our monthly issues and offers to contribute papers (with or without demonstrations) on various subjects.

Communications should be addressed to the Editors, c/o the Honorary Secretary, Newington House, Teynampett, Madras. It will be seen from the minutes of the November Meeting contained herein that the former Honorary Secretary has resigned and that Mr. H. R. N. Ellison has been elected in his place.

## *EXPOSURE TABLES.*

MR. DUNSTERVILLE is compiling some tables for use in the Madras Presidency to enable any one to know the proper exposure for any plate, at any hour between sunrise and sunset, on any day throughout the year, in any weather, using any stop from *f*5·6 to *f*64. The subjects that he has included, so far, are the following :—

1. Sea and Clouds.
2. Open Landscape.
3. Landscape with Trees in Foreground: Street Scenes.
4. Out-door Groups, or Pictures of Horses, Dogs, Cattle, &c.
5. Portraits in Open Verandah, using a White Reflector.
6. Front of Temple Muntapum, with Background of Carved Pillars in Shade.
7. Light Interior.
8. Dark Interior.

He will be glad to receive from members any suggestions as to other subjects usually taken by Amateurs, which it is thought desirable to add to the above list.

It is hoped that a specimen copy of these tables will be ready for inspection at our next meeting on December 6th proximo.

## *CLOUDS.*

MR. JOHN CLARKE, writing to the *American Amateur Photographer*, says :—

There is nothing that contributes more to the beauty of a landscape than a sky containing some fine natural clouds, but the beginner will find that there is nothing more difficult to get, or rather that nothing is so rarely got as a really good negative in which both landscape and sky are equally perfect.

But the aforesaid beginner will also have discovered that there is little in photography that gives more pleasure than the successful overcoming of difficulties, and if he is made of the right kind of stuff he will not be satisfied till he can give to his pictures the crowning glory of a cloudy sky.

There are various methods by which this may be accomplished, *a*, by a compromise in the exposure under conditions that but rarely occur both landscape and clouds may be secured in one operation; *b*, by giving an exposure suitable for the landscape, developing in the ordinary way and to the ordinary extent, and then uncovering the clouds by local reduction; *c*, by exposing two plates in succession, one long enough for the landscape, and the other short enough for the sky, and having recourse to combination printing; *d*, by making, as opportunity occurs, and keeping a stock of cloud negatives, selecting therefrom one suitable for any particular negative and combining the two.

The latter is, on the whole, the simplest and most satisfactory, although it has often led to incongruous results by the selection of unsuitable clouds, or clouds lighted in a direction other than that by which the landscape was lighted. To obviate this, and as far as possible assist in obtaining a proper selection, I have long been in the habit of marking both cloud and landscape negatives as follows: first, in my note-book at the time of exposure, and then with a writing diamond on the negative after development. For example, the marking on a negative exposed this morning is "Sept. 19, '95, N. x E., 7-30 A.M.," which tells me without further examination that the landscape lay north and by east of the point of view, and that being lighted from a little behind the right the shadows cross towards the left at a slightly receding angle.

With both cloud and landscape negatives marked in this way, it will be evident that to prevent incongruous lighting it is only necessary to select a cloud negative of as nearly as possible the same markings, and the only thing left to the judgment of the photographer is the selection of suitable masses. For this purpose a tolerably large collection of cloud negatives is desirable, and the photographer should let no opportunity of securing them slip. The landscape is always with us, but suitable clouds are like angels' visits, and must be caught on the wing.

Masses of dark clouds against a clear sky are effective for some subjects, and make beautiful examples of "cloudland" by themselves, while at the same time they are easily photographed. A rather slow plate, a smallish stop, say $\frac{f}{32}$, a brief exposure, and development in a solution weak in reducer, or, indeed, weak altogether, say, one part of the normal developer already recommended, to two parts of water. Far more generally useful, however, are negatives made from the occasionally to-be-seen beautiful masses of white cumuli on a dark blue sky, although they are far more difficult to photograph, and, indeed, cannot be successfully secured in the same way, the actinic action of the blue and the white being almost equal.

To successfully photograph this in the ordinary way, is, as I have already said, impossible; but by reducing the actinic power of the blue sky so that it shall be considerably less active than the white cloud, its accomplishment to a certain extent is easy, and the degree of success is dependent on that reduction. For this purpose color filters are most convenient, and as the result of many experiments I have come to the conclusion that the best is a rather pronounced yellowish green, or greenish yellow. It is a colored film, hermetically sealed between two very thin glass plates, and is placed inside the camera behind the lens. Experiments show that the screen increases the required exposure on ordinary subjects three or four times, but my best results on the clouds in question were exposed for less than a second with $\frac{f}{22}$.

Having obtained a stock of negatives marked as already suggested, and desiring to print in clouds, it is only necessary to select one that is otherwise suitable, and with marking as nearly as possible the same as that of the landscape negative. The first step is to place the latter against a window pane, cover it with a piece of translucent paper—ordinary writing paper will do—and draw a pencil line across the lower part of the sky, roughly following the outline of such objects as are seen against it. Paste this on a piece of opaque paper as large as the outside of the printing frame, and when dry cut the sheet in two along the pencil line.

You will now have two masks, one for the landscape and one for the sky. Place the landscape negative and sensitive paper in the frame, and to the outside of the latter temporarily fix the sky mask by a few tacks, or paste, separating the edge from the glass by a little cotton wool. When sufficiently printed, remove the landscape negative and place that of the sky in the frame, replace the print, cover the landscape portion with its mask and print the sky. This last printing may be done in the same way as the first, taking care that the clouds are not printed so deep as to be too pronounced; but a better effect is generally produced by covering the whole frame with a sheet of cardboard, and slowly moving it up and down from the top of the sky to the upper part of the landscape, thus producing a lighter shade towards the horizon.

Where a number of prints are to be made from the same negatives it will be obvious that labor will be saved by employing two printing frames, one for the foreground, the other for the sky, as in that case the masks, once properly placed, need no further alteration.

In this way, with very little practice, a charm may be given to even a very uninteresting photograph, and the photographer who gives it a fair trial and finds how simple it is will never again make pictures with bare skies.

## *The Photographic Decoration of Glass and Porcelain.*

By William Gamble.

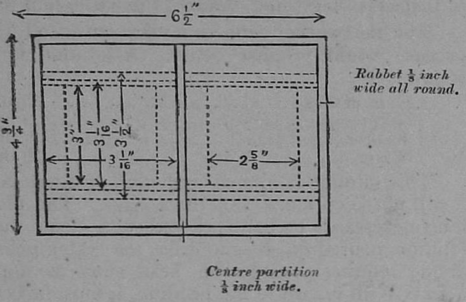
*(The Technical World).*

The decoration of glass and porcelain by photographic means is readily attainable by certain processes, but to secure vitrified photographic images involves difficult and somewhat intricate processes. Where it is simply desired to make transparencies on glass for window decoration, or pictures on opal for framing, the means are ready to hand, as prepared sensitive plates are obtainable commercially in various sizes, and, clear instructions being inclosed, no trouble should be experienced in getting results. Such plates will not, however, stand cleaning or washing, so that they soon either become dirty, and are damaged in attempts to clean them, or they fade and discolor. A more permanent and rather easy way of transferring a photographic image to porcelain or opal is to varnish the plate with copal, and then squeegee, face down upon it, a toned and fixed print on the usual sensitized albumenized paper while wet. It is allowed to dry for about four hours, and then the back of the paper is moistened with a damp sponge, when it can be peeled off, the albumen adhering to the varnish. This should then receive a protecting coat of varnish.

# STEREOSCOPI PHOTOGRAPHY.

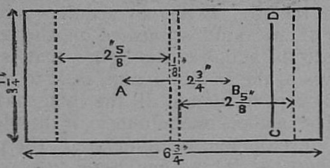
## No. 1.

SCALE HALF SIZE.



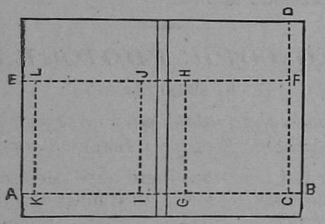

## No. 2.

*Stereoscopic print on mount.*

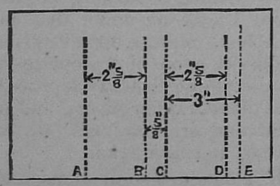



## No. 3.

*How to cut out paper stereo pictures.*

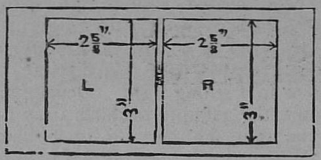



## No. 4.

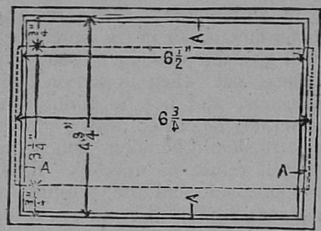



*Deal Board – 12 inches x 8 inches – planed perfectly smooth, with sides straight and grate square.*

## No. 5.

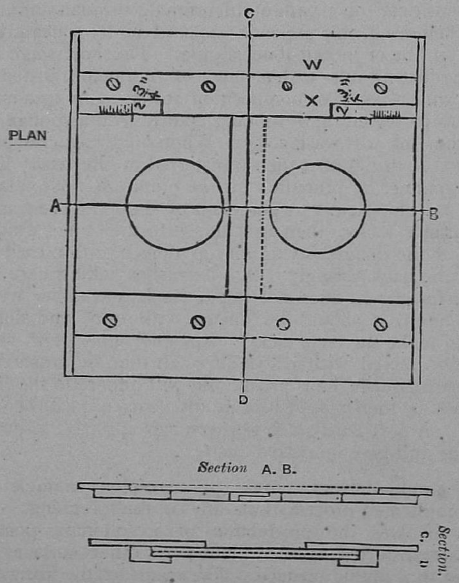



## No. 6.




## No. 7.

SCALE HALF SIZE.



Another method is the carbon process. Carbon tissue, a paper coated with gelatine mixed with pigments of various colors, may be purchased ready sensitized. It is exposed under a negative soaked in cold water, and then squeegeed to the glass, or opal, or porcelain support, which should previously have been coated with a thin sizing of gelatine (1 ounce in 18 ounces of water, with 20 grains of bichromate of potassium dissolved in 2 ounces of water added). The plates, after being coated with this mixture, are allowed to dry in the sun or in a strong light. Development is effected with warm water, the gelatine washing away in proportion to the action of the light, that unacted upon being completely washed out. When dry, a very perfect picture is left, and it is permanent so far as the fading action of light is concerned, but still susceptible to damage through moisture.

A very hard waterproof enamel picture can be made on glass, porcelain, or opal by the following process, which has the advantage of not requiring any special appliances. Two ounces of the best gum arabic are dissolved in 10 ounces of water. Ten grains of chromic acid dissolved in a little water are added, and finally 1 ounce of a saturated solution of bichromate of ammonium. When the ingredients are fully dissolved and mixed, stir in as much finely powdered asphaltum as will give the solution a good body. It must be of such thickness that, when flowed on a plate, the grain appears homogeneous, and not in minute particles. The plate should preferably be coated with a whirler. If heat is used in drying, care should be taken not to make the plate hot, or the film will refuse to develop. Exposure is made under a negative as usual, and the printing will be fairly rapid. Development is affected by gently laving with water. Slightly warm water can be used if the development does not easily progress. When the image is clear in all details, the plate should be dried, and then placed in an ordinary oven on a bed of sand or plaster of Paris. Heat is gradually applied until the proper tint is reached. The resinous powder known as "dragon's blood" could probably be equally well incorporated with the gum solution so as to give a red picture.

Another simple way of forming a kind of enamel picture is to prepare a photo-lithographic transfer rather "full" of ink. The ready coated paper for transfers may be purchased, and is sensitized on a bath of bichromate of potassium, 1 in 20. When dried, this paper is exposed under a negative or positive in line or in half-tone stipple. The next stage is to black the film all over with a thin coat of photo-transfer ink, applied with a velvet or composition roller. On immersing the print in water, and rubbing gently with a sponge, the superfluous ink will wash away. When quite clean the paper is allowed to dry, and is then transferred in the usual lithographic manner by pressure. If the picture is not too large, it may be transferred to porcelain by damping the transfer until slightly tacky, then attaching it to the object which is to receive the image, laying on top a piece of thin card and rubbing the back strongly with a burnisher, taking care that the transfer paper does not slip. Such a transfer having been secured, it should be dusted with resin, and slightly heated to make the resin tacky. Any finely powdered, vitrifiable color mixed with a little flux can then be brushed on with a soft camel's hair brush, and will adhere to the lines. The plate is then placed in a muffle furnace until the color is fused. A porcelain glaze is afterwards applied, to protect the image and give increased lustre.

The production of purely photographic enamels is a more complicated process than any of the foregoing. One method involves the production of a collodion positive, which is transferred to the plaque or other surface, and then fired in a muffle furnace. The result of the firing is to destroy the collodion film and leave the metallic silver image. To secure richness, the image, while on its collodion support, is toned with chlorides of iridium and gold. After firing, the picture is flowed with a porcelain glaze several times, until the desired brilliancy is obtained. Such a process requires an intimate photographic knowledge, and especially of that now neglected branch, the collodion processes.

For the worker who is not so advanced, the following process would promise better. A solution is made up as follows:—

| | |
|---|---|
| Gum arabic | 7 drachms |
| Grape sugar (glucose) | 3 drachms |
| Bichromate of potash | 5 drachms |
| Water | 10 drachms |

This solution is filtered and used as soon as possible, as it will not keep more than three days. The plaque, which must necessarily be flat, is flowed with clean water, and the solution poured on so as to drive the water before it. The drying requires considerable heat, such as applied by an oven. With regard to the printing, it must be borne in mind that a positive gives a positive and a negative a negative image. The tablet, when thoroughly dry and while still hot, is placed in contact with the positive, which must also be warmed. The printing is exceedingly rapid; in the most brilliant sunshine less than a quarter of a minute. As soon as the tablet is removed from the frame it begins to absorb moisture from the air. It thereby acquires tackiness, so that when powder of any kind is brushed on, the powder adheres in proportion to the action of the light; that is to say, most powder adheres to the shadows and least to the high lights. The powder is kept in motion till the image is fully charged, which should be in about one minute. If the film has become too tacky by development being delayed, the picture will be smudgy. When the image has been fully developed the superfluous powder is dusted away and the film coated with plain collodion. When this is well set, the tablet is placed in water to allow the gum and bichromate to dissolve out. The film is then dried, and, assuming that the powder employed is of a vitrifiable nature, the tablet is placed in a muffle and heat applied until the fusing point is reached. A porcelain glaze is afterward applied.

## STEREOSCOPIC PHOTOGRAPHY.

By F. Dunsterville.

*(Reprinted from a paper contributed in 1892 to the "Journal of the Photographic Society of India," and revised to date.)*

During the last few years there have been many attempts made by enthusiasts to revive this most interesting of all photographic processes, and a certain amount of success would appear to have attended their efforts, as it is by no means a rare thing to come across a paper on Stereoscopic Photography in some of the English papers.

In this paper I pretend to no originality. I intend merely to recount my own method of making negatives, prints and transparencies, and I have no doubt that our many clever members will be able to improve upon it very much. It may at the same time assist some of our novices. In compiling it I have read up everything that has appeared in the *British Journal* and other photographic papers, and probably what I may think are new and original ideas, are merely what my memory retains of what I have read.

To begin with, I obtained some transparencies from one of the leading makers at home, but I was disappointed to find their architectural subjects quite of the new "fuzzy" type, and one quarter of an inch shorter than the frames of the present skeleton style of stereoscope.

My camera is a half-plate one of the usual pattern with double swing back (vertical swing only is necessary), rising and falling front, bellows extending to 13 inches. It has a centre partition of very thin leather with folds one quarter inch wide, kept flat by a bit of thin elastic. There are six double dark slides.

For lenses, I have a pair of Ross' Portable Symmetricals for interiors and architectural views in confined spaces, and a pair of Wray's 6-inch Rapid Symmetrical Lenses for general work and quick exposures.

On the rising front of the camera I have permanently fixed a Thornton and Pickard's stereo. shutter, with centres of holes 3 inches apart. The lens flanges are screwed on to the front of the shutter and both pairs of lenses fit the same flanges. Focussing is done by pulling the cord and opening the shutter half way: exposures from, say, $\frac{1}{4}$ second to 60 seconds are easily given by using the "time" movement of the shutter; very quick exposures are given by the "instantaneous" arrangement, and those over one minute are given by putting the caps on the lenses, opening the shutter as for focussing and then removing and replacing the lens caps as nearly together as can be managed. I find absolutely no vibration whatever in either the "time" or "instantaneous" movements, freedom from which I have found in no other shutter (and they are many) that I have tried.

For plates I use Wratten and Wainwright's "ordinary" and "instantaneous" $6\frac{1}{2}'' \times 4\frac{3}{4}''$. For the usual *out-door* photography of buildings and scenery, there is, in my opinion, no plate in the market that comes within reach of Wratten's "plates." In the Xmas holidays of 1890 I exposed some 8 dozen of them $12'' \times 10''$, travelling some 4,000 miles, and there was not a spot or blemish on one of them. They are dearer certainly, but they are worth every pie of the cost.

When it comes to taking a stereoscopic negative, you will find that the focussing screen, after making allowances for the rabbet and centre partition, shows two spaces for pictures each $4\frac{1}{2}'' \times 3\frac{1}{16}''$. Now, if you intend to confine yourself to making paper prints, you should mark out on the ground glass two spaces $2\frac{5}{8}'' \times 3''$ inside which the pictures should be composed. For transparencies by reduction in the camera to the size of the masks usually sold (apertures $2\frac{5}{8}''$ square) you should rule lines on the focussing screen with a space $3\frac{1}{16}$ inch between them: if you are going to use masks $3'' \times 2\frac{5}{8}''$ you can then rule lines $3\frac{1}{2}$ inches apart, and the spaces then enclosed $3\frac{1}{2}'' \times 3\frac{1}{16}''$ will reduce to $3'' \times 2\frac{5}{8}''$ exactly. The diagram No. 1 shows the ground glass (full size $6\frac{1}{2}'' \times 4\frac{3}{4}''$) with all the lines ready ruled. It may look a somewhat complicated arrangement, but really takes very little time and saves an infinity of trouble afterwards when you come to make your positives.

It will be noticed that the lenses are permanently fixed with their centres 3 inches apart. This is a good average distance for ninety-nine out of every hundred subjects one comes across in this country, and up to the present I have had no occasion to regret having fixed upon it. For taking stereo. portraits, the lenses should not be more than $2\frac{1}{2}$ or $2\frac{5}{8}$ inches apart, but if you wish to photograph very distant mountains, the distance between the lenses may be *increased* to the greatest extent possible in the camera.

With the shutter fixed as mine, it is of course impossible to vary the distance; but for those who wish to have the power of alteration, I can recommend the use of a very ingenious front sold by Mr. Gotz, Shaftesbury Avenue the London Agent for Suter's lenses.

*How to take the stereo. negative.*—Having decided upon the subject and placed the camera at a suitable distance, ascertain whether the baseboard is perfectly level. To do this it is absolutely necessary to use a proper spirit-level, either let permanently into the baseboard or carried loose in your pocket. A very good one made of brass about 4 inches long by $\frac{5}{8}$-inch diameter, packed in a nice little wooden case, can be got for a shilling.

The next thing is to get the picture very accurately focussed, and I strongly recommend the use of a strong magnifying glass for the purpose. In my opinion *all* stereoscopic pictures should be of the very sharpest focus possible, no blurring, out-of-focus or fuzzy-type views are good when looked at in a powerful stereoscope. Having settled this to your satisfaction, pull the cord of the shutter so that it is set for "time" exposures, put in the proper stops and cap the lenses: put the dark slide in the camera, draw the shutter, take off the lens caps and squeeze the pneumatic ball for the proper length of time—let go, replace the caps, push in the shutter of the dark slide, take out of the camera and put the slide back in its case. If you have no shutter, you must take the caps off and put them on again at as nearly as possible at the same moment, for it is of course necessary that the two halves of the plate should both have the same exposures.

The proper exposure is generally the rock upon which our novices get wrecked, and to help them I may say that my standard exposure for almost any building which contains a range of tones from the brightest white to the deepest black and which takes up about two-thirds the length of the plate, using a lens with stop No. 128 ($f$-45), and Wratten's "ordinary" plate, bright sunshine between 8 A.M. and 4 P.M., is *six* seconds. For their instantaneous plates the exposure would be 2 seconds. This may sound somewhat crude to the expert, but may be the means of saving many a plate to the novice. I should give the same exposure to a building like the Taj—a pure white tomb framed in dark foliage—or to a red-brick building surrounded by trees—the development, gives one the power of producing excessive contrast or flatness, and also of avoiding those extremes.

To develope stereo. negatives, you follow the same procedure as in ordinary negatives. I advise you to use the developers recommended by the manufacturers of the plates, only reducing the pyro to two-thirds the quantity recommended and beginning with half the alkali, adding the rest as requisite. If you intend to devote yourself to the production of transparencies only, keep your negatives rather thinner than necessary for brilliant silver prints. When you have developed, fixed and washed your negatives, dry them very carefully in a place free from dust (I have a sort of muslin mosquito curtain on a frame which surrounds the drying frame and effectually keeps out all dust); and if you varnish your negatives, filter the varnish as if you were going to use it for lantern slides!

Having produced the stereo. negatives, you are in a position to make therefrom the finished pictures to be viewed in the stereoscope: these can either be on paper or on glass. I strongly advise you to keep to transparencies on glass; but as paper prints are very much cheaper, I give directions for turning them out with little trouble. Cut your sensitized paper into strips, say, $6\frac{1}{2}'' \times 3\frac{1}{4}''$. In placing the paper on the negative in the printing frame, see that the bottom edge of the paper (which should be cut straight) touches the same spot in each half of the negative, which spot should be in the nearest foreground of what will be the finished print: print for the necessary time and do not aim at getting a brilliant picture, or it will look very snowy in the stereoscope; the prints should be full of detail, with very few spots of white in the picture and (compared with ordinary silver prints) look somewhat flat. Tone, fix, wash, and dry as usual—then flatten them by passing a wooden or ivory paper knife with

one straight smooth edge over the *backs* of the prints, and cut them out as follows :—

Firstly, I may say, that when mounted, the centres of the two pictures should not be more than $2\frac{3}{4}$ inches apart, and therefore allowing an interval of $\frac{1}{8}$ inch, each half can be only $2\frac{5}{8}$ inches wide. This restriction, however, does not apply to the height of each picture, which may be of any convenient height possible on the mount, but should not, as a rule, exceed 3 inches—see Diagram No. 2.

My meaning is that, allowing an interval of $\frac{1}{8}$ inch between the two pictures, the distance between their centres A and B should not exceed $2\frac{3}{4}$ inches, and therefore each picture cannot be more than $2\frac{5}{8}$ inches wide: the height C D may, however, be the full height of the card ($3\frac{1}{4}$ inches), but is better kept down to 3 inches as a maximum, allowing a margin of $\frac{1}{8}$ inch top and bottom.

*How to cut out paper stereo. pictures.*—Sketch No. 3 is the finished paper print ready to cut out, and No. 4 is the deal board on which to cut it. See that the bottom edge and the right side are perfectly smooth and at right angles to each other and with a square (a steel one for choice), rule the lines A B C D and E at the distance given on the drawing. The lines can, of course, be ruled anywhere you please on the board, so long as their distances apart are kept accurate, but it is better to keep well to the right of the board for comfort's sake.

Take the print and lay it *on its face* with the top of the picture away from you: on the centres of the two halves mark an "L" on the left half as it lies, and an "R" on the right half: this is merely to show later on which half to mount on the left and right of the mount respectively.

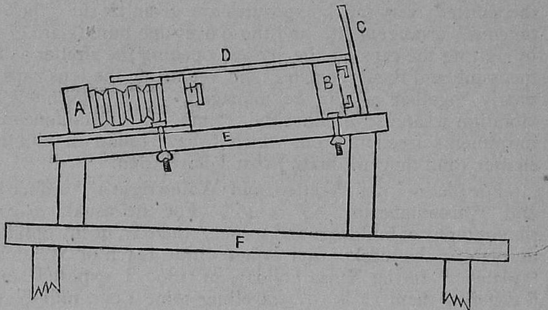
Turn the print face upward, and with the knife and rule cut the line A B (see sketch No. 3), being very particular that this base line runs through the same spot on the nearest foreground of each picture, but this will not be necessary if the paper has already been placed on the negative (when about to print) as before explained: then cut through C D at right angles to A B. The exact place on the print for the cut C D must be chosen according to the particular part of the picture you wish to show. Then cut E F 3 inches from bottom of print: this is easily done by placing the bottom of the print (A B) on the line C on the board (sketch No. 4) then placing the steel square on the line E, one cut with the knife along line E does it.

Your print is then included between the points A C F E and by placing the edge C F on the line D (sketch No. 4), and seeing that the bottom of the print A C is exactly level with the bottom edge of the board, three cuts with the knife along the lines C B A leave you with the two halves of the picture K I J L, and G C F H ready to mount.

To mount, take a card (the size is $6\frac{3}{4}'' \times 3\frac{1}{4}''$), and after starching the backs of the two halves of the picture, stick the one with "L" on its back on the left-hand side of the mount and the one marked "R" on the other side, leaving an interval of $\frac{1}{8}$ inch between them, and also top and bottom (see sketch No. 5): the titles can be written on one spare spaces at each end.

Having disposed of paper prints, we now come to transparencies, which are the most effective of all photographic results. There are, I may say, three ways of making transparencies—two by contact printing, and one in the same camera that took the negative. Of the two by contact, one is by cutting your negatives as if they were paper prints, and then reversing the position of the two halves and binding them to another piece of clean glass the same size by paper strips at the edges. But the cutting of negatives is troublesome and dangerous unless you are very expert, and it is always the very best negative that breaks where you don't want it to! The second mode is by using a special printing frame which has often been illustrated in the photographic journals. The principle is to have the printing frame of length sufficient to allow you to print from the left half of the negative on to the right half of the plate, and then to slide the plate to the other end of the frame, so that the right half of the negative prints on to the left half of the transparency plate. It is not very difficult, but requires great care, and is really only to be recommended when daylight is not available.

In India we are generally able to get daylight, and plenty of it, on at least 4 or 5 days a week, and I therefore recommended all our Indian brethren to confine themselves entirely to the "camera" process. The additional apparatus is very simple and is what I originally schemed out for lantern slides. Here it is—




"A" is the same camera with the same lenses that took the negatives (in my case, a pair of Wray's Rapid Rectilinears). The only alterations required are to one side of a dark slide and an adjustable front, which I believe is the only original part of the whole concern, and which is simplicity itself.

The plates used for negatives, you will remember, are $6\frac{1}{2}'' \times 4\frac{3}{4}$," and the dark slide interiors are, of course, only adapted for that size. The transparency stereo. plates are, however, $6\frac{3}{4}'' \times 3\frac{1}{4}$," and we have therefore merely to remove a little piece $3\frac{1}{4}'' \times \frac{1}{8}''$ from each side. The sketch No. 6 will, I hope, make the matter quite clear. It represents a plan of one of the sides of a dark slide when opened: the side to which the tin partition is *not* fixed is the side that should be chosen. "A" is the rabbet upon which the full-sized plate $6\frac{1}{2}'' \times 4\frac{3}{4}''$ rests, and you will see that by cutting out the part marked on each side in dotted lines level with the rabbet you can insert a plate $6\frac{3}{4}'' \times 3\frac{1}{4}$," as shown in dots. Care should, of course, be taken that the position of the plate in the slide exactly corresponds with the lines $3\frac{1}{4}$ inches apart to be drawn on the focussing screen.

The alteration in the front of the camera is necessary, because, although the centres of the lenses are permanently fixed 3 inches apart, when taking the negative it is advisable to have the power of alteration in the amount of separation when making transparencies. My arrangement is exceedingly simple (a carpenter made the whole of the new front, in two hours), and I have found it answer every purpose The sketches in No. 7 show the whole thing as clearly as I know how. The front is, of course, exactly the same size as the original front of the camera which has the shutter fixed to it; it has an oblong piece cut out of the centre about 6 inches by 2 inches. $X^1$ $X^2$ are two flanges, in which the two pieces Y and Z slide to and fro, separating the lenses (represented by the circles) by various distances. When shut up close the lens centres are $2\frac{3}{4}$ inches apart, and by moving the pieces Y and Z away from each other, the lenses can be separated to

just upon $3\frac{1}{2}$ inches. The centre rabbet prevents light penetrating to the plate.

On the top flange $X^1$ I glue two strips of white paper upon which I mark the distance ($2\frac{3}{4}$ inches) when the two pieces Y and Z are closed together, and other marks are made one-sixteenth of an inch apart by which you can tell how much they are apart as you gradually separate the lenses. Please note that one-sixteenth on *each* side will separate the lenses one-eighth of an inch!

The separating fronts made commercially are very ingenious, but they are so geared that each lens moves away from the other at the same speed. My arrangement allows one lens to remain still, while you move the other, and this is very useful when it comes to selecting the parts of the negatives to appear in the finished transparency.

"B" is a dealwood box with four sides and a front with a hole in it, but no back. The front is provided with grooves in which the half-plate negative slides. The box should be about $7\frac{1}{4}'' \times 6,''$ and the aperture in front should be $6\frac{1}{4}'' \times 4\frac{1}{2}''$. There should be a tin partition in the centre dividing the negative in the same place as the camera centre partition did. The inside of the box and the tin partition should be painted a dead black.

"C" is a sheet of glass ground on one side, to diffuse the light when it is not possible to point the apparatus to the clear sky.

"D" is merely a piece of cardboard which rests on top of the camera and negative frame, and is, I find, quite sufficient to keep off all outside light, and it also has the additional recommendation in that it makes it very easy to get at the lenses to remove or replace their caps or stops.

"E" is a flat board, about 30 inches long and 6 inches wide by one inch thick. It has a slot $\frac{3}{8}$ inch wide upon the centre, along which the screws travel that fasten the camera and negative frame at their proper distances apart. It has four solid legs, the smaller pair behind being about 6 inches high, while the front ones are of sufficient height to tilt the board upwards to an angle of about 30 to 40 degrees.

"F" is a plain dealwood table, the top of which is of such a height from the ground as will enable you to sit comfortably on a chair to focus: the table top should be big enough not only to carry the camera on its stand, but also to leave room for a box of negatives, focussing glass and sundries.

The camera and negative frame are fastened to the board "E" by screws about $3\frac{1}{2}$ inches long with wing nuts.

If you are going to make your transparencies on wet-plates, it will be advisable to get a single slide to fit your camera, with silver pins for the wet-plate to rest upon, and the slide should be well japanned inside to prevent any warping from the drips from the plate.

The table with the stand can be placed in an open verandah or close to a window in a room, the higher end of the board "E" pointing skywards.

Before binding up the finished pictures you have next to decide whether you intend to use ground glass or plain glass as a backing. Ground glass is the best if you can get it sufficiently fine, but it is difficult to get good, and very expensive. If you are going to use ground glass, then your negative should be put in the negative holder "B" face outwards, that is, the gelatine side towards the sky: the transparency when made will be in correct position to be viewed through its own glass, and the backing of finely ground glass completes it.

Personally, I prefer to make my stereoscopic transparencies as if they were lantern slides—that is, to be viewed through the cover glass. In this case the face of the negative must be inwards (towards the lenses of the camera), a cover of plain glass over the mask and picture completes it, and I put a very finely ground glass screen in the stereoscope, and this does for all the pictures you make. I strongly recommend others to do the same.

Placing the negative in the holder face inwards and upside down, focus the pictures roughly by pushing the camera bodily up and down the board and finish the focussing (after clamping the camera to the board) with the rack and pinion or screw movement of the camera back, using a good magnifying glass for the final adjustment. In this way you will see when the picture is in correct position between the lines on the focussing screen, remembering that the sides of the pictures in the centre should each show a little more (say, $\frac{1}{8}$ inch) of the view than the corresponding sides at the ends of the plate—that is to say, the right side of the left picture should show about one-eighth of an inch more of the view than the right side of the right half, and *vice versa* the left side of the right half should show more than the left side of the left half of the finished picture. This also applies to paper prints.

It saves worry and trouble if you make a little frame to fit the inside of the focussing frame, and glue a stereo. mask on it to cover the part of the ground glass which corresponds to the position of the transparency plate in the dark slide. You can then make perfectly sure that your finished transparency will be exactly covered in the proper place by the stereo. mask.

There are two very easy ways of making transparencies, the old wet-plate process, and the recently introduced "Lantern" plates of the proper stereo. size $6\frac{3}{4}'' \times 3\frac{1}{4}''$. The procedure in either case is the same as for lantern slides, but in order to make this a complete story, the instructions are included, with sundry additions not applicable to lantern slides.

Firstly, I would specially point out that it is in no way necessary to make stereo. transparencies so intensely clean and brilliant as is advisable for lantern slides. I have found that an exposure of twice that necessary for lantern slides under precisely similar circumstances is not a bit too much for stereos.

I like to keep my gelatine stereos. rather thin, with the least possible quantity of clear glass, and after a really good washing, to intensify with the ordinary mercuric chloride and ammonia solutions or mercury followed by Rodinal (1 to 31). The resulting colour is a most beautiful reddish-brown or black respectively.

For *wet-plate* transparencies the following articles are necessary:—Glass bath in a wooden case, with glass dipper—the bath should be at least $8'' \times 4'' \times \frac{1}{2}''$ inside dimensions.

Graduated collodion pourer to hold about 4 ounces.

Clean glass plates $6\frac{3}{4}'' \times 3\frac{1}{4}''$: they should be thin and white.

Iodized collodion, nitrate of silver, ferrous sulphate, potassium cyanide, glacial acetic acid.

*Collodion.*—This may be Mawson's or Thomas' ordinary collodion iodized some time before use, the colour should be orange.

| | | |
|---|---|---|
| *Silver Bath.*— | Nitrate of silver ... ... | ... 250 grains. |
| | Nitric acid ... ... | ... 1 or 2 drops. |
| | Distilled water ... ... | ... 10 ounces. |
| *Developer.*— | Ferrous Sulphate... ... | ... 200 grs. |
| | Glacial acetic acid ... | ... 4 drs. |
| | Distilled water ... ... | ... 10 oz. |
| *Fixing Bath.*— | Cyanide of potassium ... | ... 240 grs. |
| | Water ... ... ... | ... 20 oz. |

To clean the glass, rub it well on both sides with a little whiting in water or with tripoli powder in methylated spirit with a little ammonia—then rinse in hot water, and dry with

a clean cloth free from fluff. The plates should be as nearly chemically clean as possible to ensure freedom from streaks and stains. You may be sure of one thing and that is, you cannot make them too clean!

*Silver Bath.*—Dissolve the silver in the water add a grain of carbonate of Soda and put in the sun for a day, add the acid, and shake well up and filter carefully into the bath: the solution should be perfectly bright and clear, if not it should be refiltered.

*Developer.*—Mix the acid and the water together, dissolve the iron sulphate in the mixture, filter if necessary, and keep well corked: it is best to keep this in small (1 or 2oz.) bottles, corked and sealed, it will then keep for months.

To coat the plate, fix it on a pneumatic holder or take it in your left-hand by as little of one corner as possible, pour on to the centre a pool of collodion enough to cover the half of the plate, first dusting the face of the plate with a broad camel-hair brush: let the collodion run first to the right far corner, then to the left far corner, then as near as possible to your thumb without touching it, and pour off the surplus collodion by the remaining corner. Do all this quietly and deliberately without too much delay, then raise the plate vertically and rock it so that no streaks or lines may form in the film. Drain the plate well, but do not let it get dry anywhere, place it on the dipper face outwards and lower it into the bath with one continuous smooth movement; rock the dipper slightly to and fro for a few seconds, and then let it rest for a minute or two. Raise the dipper gently for a moment, and at first you will observe that the bath solution runs down the face of the plate in streaks, but very soon you will see that it runs smoothly all over the plate, the surface of which has now changed to a creamy white state through the formation of iodide of silver in the film. Drain the plate as closely as possible, blotting off the last drop or two, and cleaning the back with a bit of clean blotting paper. Place the plate face downwards in the dark slide, which should be kept in the same vertical position to prevent the bath solution running back in streaks over the face of the plate.

Expose the plate in the camera for the proper time and return without delay to the dark-room for development. It is most difficult to say what the proper exposure should be, as it depends upon so many different things,—the clearness and density of the negative, the focal length of the lens, size of stop used, amount of light available, state of bath and developer, &c., &c. But I may say that making stereo. transparencies from plates $6\frac{1}{2}'' \times 4\frac{3}{4}''$ using lenses $5\frac{1}{2}''$ focus with stop $\frac{f}{16}$ (U. S. No. 16), negative clean and not over-dense, camera pointing to clear sky and *not* using the ground glass, collodion, bath and developer fresh and in good order, the exposure would be about 80 to 90 seconds. *With* the ground glass "C" the exposure is increased by about 40 per cent., say, to 112 to 126 seconds. A *thin* negative may want 30 or 40 seconds, while a dense one may require 6 or 8 minutes, or perhaps more! Nothing but practice will teach exactitude, and the most experienced will often be considerably out in his calculations.

To develope a wet-plate, take a small quantity of the iron solution in a measure or cup—half an ounce or even less is ample for a stereo. plate—and flood the plate with one even sweep: care must be taken not to let the solution strike the face of the plate too roughly, and not to let any of the solution run over the sides of the plate.

To those accustomed only to gelatine plates it will seem very strange to see the very short space of time required to develope a wet-plate: the whole operation is over before a gelatine plate would show any signs of the picture! When fully developed, rinse the plate under the tap and drop it face upwards in the fixing solution.

This cyanide fixer, being a most deadly poison, had better be kept outside the dark-room; the fumes are most unpleasant and headachy, and a strong solution of hypo (say, 1 to 3) may be used instead. Fixing takes a very few seconds, and after an amount of washing that would be wholly insufficient for a gelatine plate, the wet-plate transparency may be toned or put away at once to dry. The toning-bath may be either—

| | | | | | |
|---|---|---|---|---|---|
| No. 1 | Chlor. of gold | 1 gr. | or No. 2 | Platinum tetra-chlor. | 1 gr. |
| | | | | Nitric acid | 1 drop. |
| | Water | ... 10 oz. | | Water | 8 oz. |

The "gold" first mentioned gives purple, and the "platinum" black tones. Before adding the platinum chloride to the water, it should be neutralized with a little soda carbonate.

Another formula specially recommended by the late Mr. W. Bedford for stereo. transparencies appeared some fifteen years ago in the *British Journal Almanac.* At the time I copied it into my note-book, and the following is what I find there:—

| | | |
|---|---|---|
| *Silver Bath.*— | Silver nitrate ... ... ... ... | 480 gr. |
| | Nitric acid ... ... ... | 2 min. |
| | Distilled water... ... ... ... | 16 oz. |
| *Developer.*— | Iron and ammonia sulphite ... ... | 240 gr. |
| | White sugar ... ... ... ... | 120 gr. |
| | Glacial acetic acid ... ... ... | 1 oz. |
| | Alcohol ... ... ... ... ... | 1 oz. |
| | Water ... ... ... ... ... ... | 10 oz. |
| *Collodion.*— | Ammonium iodide ... ... ... | 60 gr. |
| | Cadmium iodide ... ... ... | 30 gr. |
| | Cadmium bromide ... ... ... | 30 gr. |
| | Alcohol ... ... ... ... ... | 5 oz. |

One part of iodiser as above to every 3 ounces of plain collodion, to be mixed at least one week before using.

After the transparency has been fixed and well washed, place it in a solution of chloride of copper until it has been whitened through, then well wash and flow over it the ordinary alkaline pyro developer of about half the usual strength—the resulting tone is very effective. To make copper chloride solution dissolve one ounce of copper sulphate in 10 ounces of water, dissolve 2 ounces of table salt in 2 ounces of water, and mix the two solutions—the resulting mixture is a pretty green colour.

With all wet-plates great care must be taken not to touch the surface with the fingers, the film is excessively tender and very easily rubbed.

When quite dry, the stereos. may be varnished either with a cold dammar varnish, or after warming with the ordinary negative varnish, a little diluted with alcohol. Filter the varnish before use, and see that no dust settles upon the face of the transparencies when drying.

*Gelatine Transparency Plates.*—These may be used either for contact printing or for reducing and enlarging in the camera. All my experience has been with Thomas' and Mawson's "lantern" plates. It is possible with these plates and the developers recommended by the makers to obtain almost any tone from black to red. I prefer to keep to black tones, for there are many advantages to be gained thereby—not the least being that the time of exposure and time taken up in developing are at their shortest—the results are more certain, and by after-toning it is possible to obtain very good browns and reds. The makers themselves give the time of exposure and development as ranging from $2\frac{1}{2}$ minutes for black to 36 minutes for red tones—so the saving in time is very real.

To make stereo. transparencies in the camera, using same lens, stop, negative, &c., as already described for wet-plates, the exposure with Thomas' plates would be about 45 to 60 seconds, *using* the ground glass: with Mawson's plates the exposure would be reduced one-half. The developer is—

| | | |
|---|---|---|
| 1 | Sodium hydrate (caustic soda) | 160 gr. |
| | Distilled water | 20 oz. |
| 2 | Hydrokinone | 160 gr. |
| | Sodium sulphite | 2 oz. |
| | Citric acid | 60 gr. |
| | Potassium bromide | 40 gr. |
| | Distilled water | 20 oz. |

For use take half ounce of each No. 1 and No. 2 and add one ounce distilled water, or two ounces solution in all. Develope until *slightly* veiled in the high-lights. Fix in the following solution—

| | |
|---|---|
| Hyposulphite of soda | 5 oz. |
| Sodium sulphite | 1 oz. |
| Sulphuric acid | 1 dram |
| Water | to 20 oz. |

Dissolve the hypo in 15 ounces of the water and the sulphite of soda in the remaining 5 ounces; add the sulphuric acid to the latter, and then pour the acid sulphite solution into the hypo solution; well mix, filter into a clean bottle, and keep well corked. It will keep a long time and may be used over and over again until exhausted, but personally I like to use a fresh portion for each batch of transparencies.

After fixing and well washing, clear off almost the whole of the veil over the high-lights with Farmer's ferridcyanide reducer, then again wash and intensify with mercury and ammonia or rodinal.

| | | |
|---|---|---|
| 1 | Mercuric chloride | 10 gr. |
| | Ammonium chloride | 10 gr. |
| | Water | 1 oz. |
| 2 | Ammonia | 10 min. |
| | Water | 1 oz. |
| | or | |
| | Rodinal | 1 dram. |
| | Water | to 4 ounces. |

The transparency is first soaked in No. 1 solution until it is whitened through to the back, then well washed for an hour or two in repeated changes of water, and put into either of the solutions No. 2 until coloured through. Finally, it is well washed and dried.

Transparencies can also be toned by the uranium nitrate and ferridcyanide of potassium solution recommended by the Eastman Co. for use with their bromide paper. The solution is—

| | |
|---|---|
| Uranium nitrate | 9 gr. |
| Ferridcyanide of potash | 8 gr. |
| Glacial acetic acid | 5 dr. |
| Water | 16 oz. |

Tones from black through browns to red are very easily obtained with this solution, and when the desired tone is arrived at, the transparency should be washed only until the slight yellow stain in the high-lights is removed. Any longer washing only results in the loss of the colour previously obtained.

When the slides by any process are dried and finished, see that any spotting or retouching that may be desirable be attended to—then varnish.

To mount the finished transparency, get a clean, thin white glass $6\frac{3}{4}'' \times 3\frac{1}{4}''$, place the mask on the picture, cover it with the plain glass, and bind the edges with strips of black gummed paper: the title can be written on the mask with white ink at the bottom, and on the top corners you can put the consecutive number of the slide and the maker's name.

The only thing now wanting is a stereoscope: they can be got of all sorts and sizes and at various prices. I have four different kinds:—

1. An American pattern. A cheap and fairly good article; focus of lenses about $6\frac{3}{4}$ inches, price 5*s*.

2. Chadwick's Lenticular. A short-focus kind (4 inches) which answers its purpose admirably, price 17*s*. 6*d*.

3. Box Pattern. The kind we used thirty years or more ago, focus of lenses (which are better than in former days) about $4\frac{1}{4}$ inches, price 20*s*. to 30*s*.

4. Chadwick's Revolving Stereoscope. A very handsome piece of apparatus in walnut: it holds 50 transparencies or paper prints, and when filled with pictures it is calculated to keep a visitor quiet for an hour. The focus is 5 inches. Price £3-12-6.

Of the three cheaper patterns, I strongly recommend No. 2. Nos. 1 and 2 have sliding adjustments; Nos. 3 and 4 have rack and pinion.

Mr. W. J. Chadwick, of No. 2, Saint Mary's Street, Manchester, is an expert in stereoscopic photography and is about the only dealer who lays himself out specially for stereo. apparatus. Anyone wishing to go in for this process cannot do better than place himself in Mr. Chadwick's hands.

I have now, I think, come to the end of my tale, and I can only hope that the pains I have taken in writing this paper will be recompensed by the production of a first-class lot of stereoscopic transparencies for exhibition at the next photographic show held by our Society.

Perhaps some may think I have not included enough different processes in my directions, but I have made no transparencies by any other process than the wet and gelatine plates or by any other mode than in the camera, and I thought it better to keep to what I knew rather than copy a lot of instructions from other people's writings. I would recommend everyone to read Chadwick's Stereoscopic Manual, price 1*s*., and Mr. Trail Taylor's leading article on the Stereoscope in the *British Journal Almanac* for 1887.

## OUR HOME LETTER.

Since I last wrote you, our two greatest Exhibitions, that of the Royal Society and of the Salon, have been opened, and are now in full swing. They are both very instructive, and a visit to them is of great value to any photographer who is anxious to improve and advance. In fact one may see lots of photographers at both galleries, catalogue, pencil and notebook in hand making notes and sketches, with a view to future reference. The appreciation of photographs is growing in this country among all classes, and the large increase in amateur photography has much to do with this, for the majority of amateurs, however *dilettante* their own work may be, are at all events able to appreciate artistic merit in the photographs of others. It is beginning to be generally recognised that there is enormous scope for art in picture making by photography, though it labours under more restrictions than drawing or painting. Still a photograph, unless indeed it be merely intended to record some event, or of topographical utility, receives scant attention if it has no claim to pictorial merit. Terms such as pyramidal composition, converging lines, and balance of light and shade, are used with remarkable fluency by young men and boys with outfits of the most modest description. The fact that good work can be produced with comparatively inexpensive apparatus is being more and more generally recognised. This is diverging to some extent from the subject. The Pall Mall Exhibition as it is called is held by The Royal Photographic Society of Great Britain. It is a good all-round show, and includes examples of

photography in many different processes. Such men as W. M. Warneuke, Will. A. Cadby, Hall-Edwards, Ralph Robinson, John A Hodges, John H. Avery, L. C. Bennett, R. J. Fry, F. P. Cembrano, James A. Sinclair, Andrew Pringle, Edgar G. Lee, and others exhibit here. It is interesting to notice a large increase of carbon prints, and a decrease of bromide and gelatino-chloride prints. A marked change has taken place during the last few years in the style of framing and mounting. Light mounts, plain oak frames and gaudy composition frames are fast disappearing in favour of more simple surroundings made of oak or ordinary wood stained to various shades, chiefly brown, though in some cases black or green; occasionally a dark gilt or dark red slip relieves the sombreness of such frames. Mounts are frequently entirely absent, the picture extends right to the frame. Where they are present, they are chiefly dark greys or dark browns. At the Salon the frames are particularly noticeable, much thought seems to have been put into many of them, and some wonderfully pleasing effects are to be seen there. As a purely artistic show the Salon ranks first. It is supported by some of our cleverest photographers among whom may be mentioned H. P. Robinson, Arthur Burchett, J. Craig Annan, Bernard Alfieri, Eustace Calland, H. H. Hay Cameron, Hector Colard, William Crook, George Davison, Frederick Hollyer, Karl Greger and others. The Salon shows a marked advance since last year, and its promoters have every reason to be proud of the success reached so far.

Here, in England, we wonder that you photographers in India do not devote more time to the photography of monuments, temples and inscriptions, in which your country is so rich. Perhaps you do more than we think, but at all events the results are not much seen in Britain. Recently Professor Max Müller wrote an article in "The Nineteenth Century," in which he expressed the wish that contributions might be forthcoming towards defraying the expense of photographing the temples and inscriptions of the Kutho Daw. Philosophers know well that, if only a tithe of the words which are cut on Indian temples could be systematically copied and translated, a great flood of light might be thrown on the religion of early civilizations, dating back many thousands of years. It would be laborious work no doubt; nevertheless the game would be worth the candle, for we might thereby recover at any rate a portion of the mighty store of information which was destroyed in that fearful act of vandalism, the burning of the Alexandrian Library. Apart from these deeper matters there is an enormous amount of work to be done in simply photographing temples and monuments which are architecturally beautiful.

I fear I am exceeding the space which your Editor can afford to place at my dispossal, so will bring this letter to a conclusion.

MATTHEW SURFACE.

*October 9th, 1895.*

## PROCEEDINGS OF THE SOCIETY.

:o:

**Monthly Meeting held at the Masonic Hall, Mount Road,**

***Friday, November 1st, at 6 p.m.***

Mr. E. W. Stoney, President, *in the chair.*

The minutes of the previous meeting, having been circulated to members, in the last issue of the Society's Journal, were taken as read and were confirmed.

The Honorary Secretary communicated—

(1). Resignation of membership of Mr. Wolfe, as he had given up photography.

(2). Prospectus of an Exhibition of Artistic Photography to be held in Brussels, during January and February next year, full particulars of which will be found elsewhere in this issue of the Journal.

(3). Memorandum from Otto Schölzig, 31, Binfield Road, Chapham, S. W., forwarding sample print on his "Otto" Paper, said to have *toned in 10 minutes and only washed and dried;* also the following formulæ for cold development of Dr. Jacoby's Platinum Paper :—

"Keep a waterproof pad in the printing frame on the back of the print.

Avoid touching the surface of the paper with your fingers.

Print until the half tones are clearly visible.

The prints should be examined in very subdued light.

Develope by floating the print, film side down, on the following bath :

4 oz. Oxalate Solution (1 part Oxalate of Potash to 3 parts Water.)

1 oz. Glycerine.

The temperature should not be below 64° Fah.

Under-exposed prints require warmer developer.

The best result is obtained by using my Developing Salts as follows :—

*½ lb. Developing Salts* }
*5 pints Warm Water* } *dissolve and allow to cool.*

This solution keeps and can be kept in stock bottle.

For Sepia Tones add to every 6 oz. of developer 1 oz. of a 4 per cent. solution of Bichloride of Mercury, (*i. e.*, 19 grs. to 1oz.)

Clearing.—After development the prints should be immersed for 4 minutes in each of 2 successive baths, each made up as follows :

Hydrochloric Acid 1 part—Water 60 parts,
after which wash for 15 minutes in several changes of water."

The President communicated letter from the Honorary Secretary, tendering his resignation, and requesting to be relieved of his duties immediately, as the demands upon his time prevented him from remaining in office any longer. He said that though this intimation was received with great regret, yet they could not expect Dr. Van Geyzel to continue in office under the circumstances. Mr. H. N. R. Ellison kindly undertook to relieve him of the charge.

### New Members.

Mr. J. L. Walker proposed, and Mr. Oakes seconded, Mr. H. D. Rice, who was duly elected a Member of the Society.

## Question Box.

*Q.*—Using separate toning and fixing baths as per Eastman's formula (Borax), the prints tone to a blue, but after fixing turn red, as specimens sent herewith (see Clouds). The only instruction disregarded is the alum bath, which I omit. Can you account for the unpleasant tones? I shall be glad of any information helping me to get purple or black tones?

*A.*—The paper you use is stale. From the samples of unprinted paper you sent, it is evident that the paper is not fresh, otherwise from a good negative it would print purple, whereas it is found that it prints a foxy red, which is one of the best signs by which to tell whether paper is fresh or not. It may be mentioned that purple or black tones can only be got from really good negatives, which allow of deeply printing and long toning. Prints from weak or fogged negatives cannot be toned to purple or black without spoiling their appearance in other ways. It is recommended to use the formula given by Eastman Co. for a Neutral Combined Toning and Fixing Bath. It will be seen from the prints made on the samples of paper you sent that, even on this stale paper, from good negatives it is possible to tone prints to a satisfactory brown bordering or purple.

## Monthly Exhibition of Pictures.

The subject was "Clouds," and a fair number of members sent in specimens of their work. The best were by Mrs. Shaw, of Dindigul, whose clouds were evidently taken very successfully on the same plate as the landscape in each case.

Mrs. Upcott sent in 4 prints of clouds taken at Coonoor. The storm effects were very good and the mist on the Ghaut very well represented; the colour to which the prints had been toned was also very suitable to the style of picture produced.

Mrs. Shaw (Dindigul.)—These, as mentioned above, were the best sent in. The clouds were very properly subordinated to the landscape, and were quite as deeply printed as clouds should be (except perhaps in very exceptional cases.) The tones of the prints were not satisfactory, the paper apparently refusing to tone, as will be seen in another part of the Journal. under "Question Box."

P. J. Rose.—The bromide print was much over-developed, and showed very clearly where the lower part of the print had apparently been shaded when printing the clouds in.

E. Maennig.—Two prints on Nikko from same negative—one much over-developed, the other only slightly so. It should be noted that, when mounting prints on cards, more space should be left at the bottom than at the top.

H. H. Second Prince of Travancore.—Very good cloud effect. Would have been much improved by some sort of a picture being under the cloud, instead of a black horizon in places.

H. N. R. Ellison.—4 prints. Two of them are stained, apparently with drops of Hypo. The clouds themselves are very good, notably the large picture. The sunsets are striking, but would have been much improved by more detail in the foregrounds, which are somewhat foggy and blank.

W. H. Oakes.—Several prints of sunrises over the sea. Quality good, and effects satisfactory.

F. Dunsterville.—Lantern slides of cloud effects taken on a recent visit to England.

M. Clementson.—A very good print, but badly trimmed and mounted.

Samples of Barnet plates had been received from Messrs. Elliott and Sons. They had been tried and found rapid, very clean in development, and suitable for the Indian climate; no signs appearing of blistering, frilling or softening of film, with water at ordinary temperature.

## Picture Subject for next Month.

The Picture Subject for next month will be "A Horse."

## Miscellaneous Exhibits.

The Honorary Secretary showed prints exhibiting the qualities of the new "Cooke" Lenses. The definition up to the margins, and freedom from astigmatism and flare, of these lenses were well displayed by these prints. These points were shown in a convincing way by a print which showed by comparison the result, under similar conditions, of the work done by a "Cooke" lens, series 3 and of an R. R. lens, both working at *f*/8.

Surgeon-Major Farmar-Bringhurst sent some film negatives to illustrate their keeping qualities. Four of these were remarkably clean and free from fog and spots. They were Thomas's Rapid Cyclist films, regarding which he says.—"I "purchased in England in 1892. Eight out of this packet were "used then and the remaining four have been knocking about "(uncared for and forgotten, till the other day) in a box of "photographic materials, through three hot seasons, the box "travelling by goods train. They have been in Bombay, Karachi, "Secunderabad, Bangalore, the West Coast, and Madras. "I resolved to try them the other day on chance and slipped "them into carriers, and exposed them in Adams's $\frac{1}{4}$ plate "camera, R. R. Lens, shutter working at $\frac{1}{30}$ second. Pyro "soda developer was used." The results speak volumes for the keeping qualities of these films. He also showed half-a-dozen films of another brand, purchased in Madras only a fortnight ago, all fogged and spotted.

Mr. Stoney then gave an exhibition of about six dozen of his Lantern Slides—Views of Irish Coast Scenery, of Malabar, of Shervaroy Hills, and of other Indian subjects. Mr. Stoney's slides are well known for their technical excellence, and the exhibition attracted a large gathering of members.

After this, Mr. Dunsterville showed half-a-dozen slides of Sunlight Effects on Water, which he had taken recently in England. The slides, which were technically perfect, unfortunately suffered somewhat from the weak illumination of the lantern used.

A hearty vote of thanks to Mr. Stoney concluded the meeting.

## *Answers to Correspondents.*

**Special Notice**—*Letters requiring an answer in this column must be received not later than the 5th of each month.*

*All queries should be written on one side of the paper only, and be signed with the name and address of sender.*

**F. B.**—(1) "In measuring from R. lens to plate for *enlarging* do you take distance from diaphragm or back lens?" The distances should be measured from the diaphragm. (2) "Is there any advantage in having a *long focus lens* (say 9 in. for half-plate) for landscape work?" This is purely a matter of personal opinion, though it may be accepted that generally more pleasing effects are obtained with longer focus lenses, though we should not call 9 in. a long focus for half-plate; 12 in. would be.

**H. W.**—"I have made some hydroquinone developer (as per Ilford formula) with hot-water, but it has turned red when water is poured on. I have made this solution many times, but never with this result. Would sodium sulphate instead of sulphite cause the redness?" This red colouration is due to oxidation, and the absence of sulphite would certainly tend to produce it. It will do no harm.

**W. R.**—"Please tell me how the inevitable pin-holes, either from dust or air-bubbles, in a negative are best stopped out. Any water-colour paint seems to make them worse." Mix ultramarine, carmine, and sepia to match the colour of the deposit of the image, using thick gum water; the pigment should be as thick as possible, and a fine-pointed camel's-hair brush should be well charged with the colour, and the point only of the brush just touched on the hole; if large holes, then a repetition of the dot or stipple will be required.

**E. S.**—(1) "I notice that if I mix equal parts of Nos. 1 and 2 hydroquinone developer (Ilford or Thomas's formula) and leave it exposed to the air for, say, two or three days (or else keep all old developer, used for making lantern slides, etc.), and then use it for developing bromide paper, that I get a warm tone; is this tone as permanent as the one obtained by using the developer fresh, and what is the cause of the warm tone obtained by using the old developer?" There is not the slightest doubt that the warm tone is quite as permanent as the black, and it is probably due to the presence of bromide and oxidation products.

## *ABSTRACTS.*

**Lantern Slides from Book Illustrations.**—The *Amateur Photographer* writes:—"From across the Atlantic comes a description by Mr. E. W. Scripture of an ingenious method of making lantern slides from book illustrations. Slide-making by the ordinary methods must be an expensive process in the States, for Mr. Scripture plaintively reports the fact that each slide never cost him less than half-a-dollar to make. This excessive expenditure set him a-thinking, and he at length hit upon the happy thought of utilising the process blocks themselves for printing direct upon the glass slides! The *modus operandi* is, shortly, as follows:—The block is inked by a simple hand roller, the ink being a fine one tempered to the proper consistency with Calcutta boiled oil and japan drier, and then placed in a mount face upwards on the table, a piece of plain glass being set at a proper distance and on a level with it. A composition roller, made rather hard, is then run forward on two guides. As it passes over the block it takes the impression. On reaching the glass, after one complete revolution, it transfers the ink directly to it, the result being a print on the glass in the same way as on paper, but of superior quality. Mr. Scripture claims for his discovery a great gain in economy and a rapidity of output. Certainly, the process commends itself to a large class of lecturers who use slides made from black and white work, and still more to those who supply the slides. Publishers of enterprise, please copy!"

**Fine Engravings in a Higher Class than Photography.**—Mr. Seymour Lucas recommends that fine engravings of original works should be placed in a higher class than photography, which in his opinion is nothing more than a mechanical operation where very little artistic skill, if any, is required. In fact, he adds, it is the sun that makes the picture in a few seconds; whereas the engraver has to spend month upon month, and sometimes years, in producing a fine plate. Probably few photographers will be disposed to quarrel with this dictum so far as it applies to the mere copying of original works; though the unbiassed mind can hardly follow Mr. Lucas and some other artists of repute in their contention, implied if not always fully expressed, that the *time* bestowed upon a work regulates and measures its degree of artistic merit. In any branch of art it is possible to evince as much skill in five minutes as, may be, in five years. Indeed, a painter may need fifty years of training and practice to give such a demonstration; but the fact remains that the exhibition of skill is not commensurate with mere occupation of time. If the reverse were accepted as truth, a brief recital by a Paderewski would be held less artistic than the piano pounding for four-and-twenty hours on end recently indulged in by an athletic Teuton at the Royal Aquarium.—(*Amateur Photographer.*)

**Black Varnish for the Inside of Cameras.**—This is prepared by dissolving—

| | |
|---|---|
| Borax ... ... ... ... ... | 15 parts |
| Shellac ... ... ... ... ... | 30 ,, |
| Glycerine ... ... ... ... ... | 15 ,, |
| In hot water ... ... ... ... | 500 ,, |

And adding—

| | |
|---|---|
| Aniline black ... ... ... ... ... | 60 ,, |

**Roller-blind Shutters** require to be tested occasionally to see if the shutter fabric is quite light-tight. If tiny holes can be seen the course to be taken is obvious; if they are only suspected a plate should be exposed in the camera in a strong light; if the shutter blind is faulty, the existence of the holes will be proved (after a long exposure) during development of the plate. To remedy the holes the fabric may be treated with a non-actinic varnish, or a new roller-blind inserted. A puncture or accidental tear may be remedied by a piece of court plaister, a piece of mackintosh applied with india-rubber solution, or by a piece of strapping plaster, as described above.

**Straining after Titles.**—The *Amateur Photographer*, speaking of the recent Exhibition of the Royal Photographic Society, says:—"Why do photographers strain after titles which they consider pretty? No. 99 in the Exhibition of the Photographic Society is called "The Ship was Under Sail." The brig which is the subject of the picture is under nothing of the sort, she is being towed by a steam tug, and the sails are only just slightly loosened. Mr. Lyd. Sawyer's picture entitled "Mirth" merely represents a lady picking her teeth with her finger, an action not at all calculated to suggest merriment. Why, too, the ragged, bare-footed lad, No. 256, smoking an obviously empty pipe, should be called a "Decadent" is "one of those things that no fellah can understand." Again, in No. 48, which part of the picture represents the "Labour of Love"? The man who is spokeshaving the gunwale of the boat, the other man standing at the bow who has evidently been told "not to move for a minute," or either of the two women who are darning stockings? From the expression of the various faces there does not seem much love anywhere amongst them."

## *AMUSING EXTRACTS.*

### The Amateur Photographer.

Some day, when the punishment is fixed to fit the crime, the worst thing that can befall a criminal will not be death by electricity or hanging, or even by drawing or quartering. No, the most heinous of offenders will be punished by no such mild processes as these. He will be doomed to dwell under the same roof with an amateur photographer, and the worse the crime, the more enthusiastic will be the amateur photographer, and the smaller will be the roof that covers them. It is only under conditions limited as to space that the amateur photographer rises to his full powers of diabolical annoyance. He is not a pleasing companion at any time, this amateur whose talk is all of plates and processes, whose fingers and clothes are fearfully, wonderfully, and chemically affected, and whose mind is all on one topic. But when he is at close range he is particularly and unspeakably awful. Every room in the house is turned into a dark room, should he so demand it, bath-rooms preferred, as having running water and being especially inconvenient for the rest of the household. Furniture and hangings are looked upon as merely so many scenic accessories. Many a time entrance is denied callers because the halls and drawing-room are in the act of being taken, and must not be disturbed or disarranged. That valuable utensil, the clothes horse, is no longer available for laundry service. When draped with curtains, there's nothing like them for a background, says he of the camera. The worst and most humiliating time of all, however, is when the amateur photographer is seized with a passion for portraiture, and insists upon perpetuating the features of his unfortunate family in a manner as revolting to art as it is to vanity. He thinks nothing, either, of displaying these awful likenesses upon all occasions, his mind being concerned only with their technical instead of their

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personal aspect. Only the strongest ties of affection can render his presence at all supportable. He is simply an infliction and a torture. His true place in society is beside the thumbscrew, the gallows, or the whipping-post, where he would at least be of some practical service.—*Detroit Free Press.*

## *How to Prepare Percentage Solutions.*

The following tables, copied from the *International Annual of Anthony's Photographic Bulletin*, will, we think, be of use to our subscribers on many occasions. We may say here that the International Annual is one of the most beautifully illustrated and printed books we have ever seen. Full of all sorts of information and instruction, it is useful alike to amateur and professional photographers. We purchased our copy from Thacker and Co., Bombay, price Re. 1-12. The tables are prepared by Mr. C. C. Sherrard, PH. C.

### For Making any Quantity of Percentage Solutions.

| To make | For each 1 fluid ounce of water take of the salt | For each 2 fluid ounces of water take of the salt | For each 3 fluid ounces of water take of the salt | For each 4 fluid ounces of water take of the salt | For each 5 fluid ounces of water take of the salt |
|---|---|---|---|---|---|
| | Grains. | Grains. | Grains. | Grains. | Grains |
| 1 per cent...... | 4.557 | 9.114 | 13.671 | 18.228 | 22.785 |
| 2 per cent...... | 9.114 | 18.228 | 27.342 | 36.456 | 45.570 |
| 3 per cent...... | 13.671 | 27.352 | 41.013 | 54.684 | 68.355 |
| 4 per cent...... | 18.228 | 36.456 | 54.684 | 72.912 | 91.14 |
| 5 per cent...... | 22.785 | 45.57 | 68.355 | 91.14 | 113.925 |
| 10 per cent...... | 45.57 | 91.14 | 136.71 | 182.28 | 227.85 |
| 15 per cent...... | 68.355 | 136.71 | 205.065 | 273.42 | 341.775 |
| 20 per cent...... | 91.14 | 182.28 | 273.42 | 364.56 | 455.70 |
| 25 per cent...... | 113.925 | 227.85 | 341.775 | 455.70 | 569.625 |
| 40 per cent...... | 182.28 | 364.56 | 546.84 | 729.12 | 911.4 |

### For Making any Quantity of Solution When Stated in Parts per 1,000, 100, etc.

| To make solution of | For each 1 fluid ounce of water take of the salt | For each 2 fluid ounces of water take of the salt | For each 3 fluid ounces of water take of the salt | For each 4 fluid ounces of water take of the salt | For each 5 fluid ounces of water take of the salt |
|---|---|---|---|---|---|
| | Grains. | Grains. | Grains. | Grains. | Grains. |
| 1 in 1,000....... | .4557 | .9114 | 1.3671 | 1.8228 | 2.278 |
| 1 in 500....... | .9114 | 1.8228 | 2.7342 | 3.6456 | 4.557 |
| 1 in 400....... | 1.139 | 2.278 | 3.4177 | 4.557 | 5.695 |
| 1 in 300....... | 1.519 | 3.035 | 4.557 | 6.076 | 7.59 |
| 1 in 200....... | 2.2785 | 4.557 | 6.8355 | 9.114 | 11.39 |
| 1 in 100....... | 4.557 | 9.114 | 13.671 | 18.228 | 22.785 |
| 1 in 50....... | 9.114 | 18.228 | 27.342 | 36.456 | 45.57 |
| 1 in 25....... | 18.228 | 36.456 | 54.684 | 72.912 | 91.14 |
| 1 in 10....... | 45.570 | 91.140 | 136.710 | 182.280 | 227.85 |
| 1 in 5....... | 91.14 | 182.28 | 273.42 | 364.56 | 455.7 |

We may say that, in giving the above figures, the resulting solution is correct as regards percentage composition, though it may measure slightly more than the water taken, owing to the increase in volume which always takes place in some degree when a solid passes into a solution in a given amount of liquid. This expansion is not appreciable for small amounts of the solid, but at 25 per cent. or more it may be noticeable.

### List of Members, resident in Madras, whose Dark Rooms are available for use by Members of the Madras Amateur Photographic Society, whenever they visit Madras.

J. L. Van Geyzel, Dare's Gardens, Chetput.
J. L. Walker, Holloway's Gardens, Pantheon Road.
T. P. S. Nagaratnam, 47, Malayappen Street, Black Town.
A. W. G. Stranack, Kilpauk.
A. Chatterton, College of Engineering, Chepauk.
W. H. Oakes, Anderson's Road, Nungumbaukum.
Surg.-Col. P. H. Benson, Mysore.

## *SALE AND EXCHANGE.*

*NOTICE.—Members of the Madras Amateur Photographic Society are permitted to use this column free of charge for two insertions of each advertisement—all subsequent insertions of the same being chargeable at 2 Annas a line. When an advertisement becomes liable to this charge, it will not be inserted unless a postal order or stamps to the value of the charge are previously sent, addressed to Oakes and Co., Ld., Mount Road, Madras. Advertisements received up to the 5th of each month will be inserted in the next issue of the Journal; those received after this date will be held over for the subsequent issue.*

*Subscribers, and others who are not regular dealers, may make use of this column for advertisements by paying at the rate of 3 Annas a line.*

For Sale.—A 10 × 8 Watson's "Premier" Camera, with 3 Double Backs. Thornton Pickard Time and Instantaneous Shutter, with Speed Indicator. All Brass Bound. The Shutter is specially made by the Company to work at a higher speed than the regular Shutters advertised by them, and is fitted to camera front to work behind the lens. Also one strong Tripod Stand with rule joints and sliding legs.

The above cost in London over £20 and are in good serviceable order. Price Rs. 170.

Also a 10 × 8 R. R. Lens with Iris diaphragm, by Wray, in new condition, cost a short time since £6-15. Price Rs. 100. Or the whole together, Rs. 250.

Apply to the Chaplain, Dharwar, S. M. Ry.

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*All communications connected with the issue of the Journal should be addressed to Messrs. OAKES & Co., Ld., Mount Road, Madras, and letters for the Editors should be addressed to them, care of the Honorary Secretary of the Society, Chetput, Madras.*

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Can be fitted to any make of Camera at a small cost.

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„ 7. „ „ ...Ammon. Bromide.
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|---|---|---|---|---|
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| Instantaneous ... .. | 2 | 0 | 2 | 4 | ..... | | ..... | | 7 | 6 | 8 | 4 | 11 | 4 | 13 | 0 | ..... | | ..... | |
| Drop Shutter ... .. | 2 | 5 | 2 | 10 | ..... | | ..... | | 7 | 14 | 9 | 0 | 13 | 3 | 14 | 4 | ..... | | ..... | |
| ILFORD'S.— | | | | | | | | | | | | | | | | | | | | |
| Ordinary ... ... ... | ..... | | ..... | | ..... | | ..... | | 4 | 2 | 4 | 10 | 7 | 4 | 8 | 4 | ..... | | ..... | |
| Rapid ... .. | ..... | | ..... | | ..... | | ..... | | 5 | 4 | 6 | 0 | 9 | 8 | 11 | 0 | 13 | 0 | 14 | 12 |
| Special Rapid ... | ..... | | ..... | | ..... | | ..... | | 6 | 9 | 7 | 6 | ..... | | ..... | | ..... | | ..... | |
| Isochromatic (Medium)... | 1 | 2 | 1 | 5 | ..... | | ..... | | 4 | 8 | 5 | 0 | 7 | 4 | 8 | 4 | ..... | | ..... | |
| THOMAS'S.— | | | | | | | | | | | | | | | | | | | | |
| General ... ... ... | 2 | 0 | 2 | 4 | 4 | 8 | 5 | 0 | 7 | 8 | 8 | 8 | ..... | | ..... | | ..... | | ..... | |
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